



State of Utah

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April 27, 2004

***** ADDENDUM *** ADDENDUM *** ADDENDUM *****

SOLICITATION: JG4133

DUE DATE: May 4, 2004

TIME: 3:00PM

DESCRIPTION: MULTI-STEP BID FOR OPEN SYSTEM STORAGE

ADDENDUM #2

The following are to be added or changed to the specifications for this BID:

1. The attached is a list of questions received and the State's answers. The answers are to become official parts of the bid.
2. With procurement, process questions contact Jared Gardner (801) 538-3342.

*****END OF ADDENDUM*****

To acknowledge receipt of addendum, include a copy of this addendum with BID submittal or give written acknowledgement with the BID. It shall be the responsibility of the bidder to appropriately disseminate this information to all concerned prior to the assigned bid time.

Company Name

Signature

Date

OSS Bid Questions and Answers

Quotes indicate excerpts from the bid. Bold indicate our answer.

1. “It is anticipated that this bid may result in a contract award to a single contractor.” Does this mean that you may use more than one contractor for the various components of this need?

Yes. We may or may not choose to.

2. “The state requires two (2) mid-tier product and support service customer references be provided, one (1) of which must be located in the State of Utah.” Do the references of mid-tier products have to be disk array related or can they be other mid-tier IT infrastructure products to the State of Utah and other entities?

The products referenced must be those you are bidding.

3. “The State requires proof of financial stability. Provide audited Profit & Loss statements for the last 4 years.” The first paragraph of Section 1 indicates three years but this states four years. Are they both supposed to be three or four years?

Three years.

4. “The proposed offering(s) must connect to and support Fibre Channel, iSCSI, SCSI, FCIP and NAS technologies without the need for additional hardware or software.” Are you stating that the array subsystem has to support all of the above protocols / technologies in a single disk array subsystem?

At a minimum, Fibre Channel must be supported. For any others not built-in, describe how they would be supported and price them separately.

5. “The proposed solution(s) must be able to support the following file systems: NFS, CIFS” Same question as the previous, does this have to be all in one subsystem?

Yes it does.

6. “The proposed solution(s) must be able to support the following file transfer protocols: HTTP, HTTPS, FTP” What is the intention of these protocols, management of the array and/or something additional? If so, would you please clarify?

Change the specification to read: “The system must be manageable via a secure web interface.”

7. "The proposed solution(s) must provide the ability to do synchronous or asynchronous volume replication within the solution and to other storage devices at the State of Utah, including devices at remote locations." Would you please state what "other storage devices" the State of Utah owns to know of compatibility to perform such a function?

IBM 2105 ESS model F-20 and model 800

8. "As such the contractor must guarantee to provide 6 years of full maintenance support" Are you just stating the requested supported life span of the array or are you requesting the costs on a full six years? .

We want the vendor to commit to support the product for six years, but we only want pricing for three years.

9. "The contractor is required to support and use Remote Diagnostics to aid in evaluating the status of hardware and software maintained by the contractor." What does the State of Utah allow for remote access accessibility? Do you allow for firewall openings from and to particular ports and IP addresses or subnets to allow for the remote diagnostic access?

We assumed a separate dial up connection would be used. If the system must be accessed via our network we will need to negotiate the security requirements.

10. "The contractor is required to provide Phone Home service for all hardware supporting that support feature." Does this mean then that a device that doesn't support the feature will not be excluded?

Correct.

11. Does the State require a solution that will concurrently support Fibre Channel, FCIP, iSCSI, SCSI, and NAS?

See reply to Question #4.

12. The stated requirement that the aforementioned technologies must be initially supported "without the need for additional hardware or software" adds significantly to the overall solution cost. Since several of these technologies are generally provided for outside of the disk subsystem (iSCSI and FCIP), would these be something that the State would rather acquire as required?

See reply to Question #4.

13. Please describe the current SAN topology.

a) Switch/Director vendor/model/type

In SLC, IBM 2032-064 (McData 6064 OEM)

In Richfield, McData ED5000

b) Number of ports (1or 2Gb)

In SLC, 64 1Gb ports

In Richfield, 32 1GB ports

c) How many servers will be accessing the disk subsystem from the SAN?

Currently 30-50, and increasing

d) How many of the above will require dual-pathing?

Currently about 10% (3). Provide a minimum of 4 fiber connections, with the ability to increase them.

e) What percentage of the required capacity will be accessed via the SAN (as opposed to the NAS requirement)?

Currently 100% SAN, but there is future potential for NAS

14. Please describe the NAS requirements

a) How many servers will access the NAS device?

Currently none, but there is future potential for NAS

b) What are the anticipated workload requirements for the NAS environment?

Currently none, but there is an unknown future potential

15. Please provide specific information for each of the items listed under "Compatibility" so that we may state affirmatively whether each of the requisite solution components are supported.

Our main concern is compatibility with each Operating System.

Operating Systems

Sun Solaris versions 6,7,8,9

HP/UX version 11.0 and 11.11

AIX version 4.3.3, and 5.1

Linux Red Hat 3.0 and 2.1

MS Windows 2000, Windows 2003, and NT4

Novell 5.1 and 6.5

Database engines

Oracle 8.1.7 and 9i

DB2 7.1, 7.2, and 8.1

Applications/programs on servers

Netscape Web server 3.6, 4.0, 6.0

Apache Web Server v1.3

WebSphere v 3.5 and 5.0

Iplanet app server 6.5

SunOne app server (7)

Net Dynamics 4.1.3 and 5.0

Versata v5.01.02

Siteminder Agent v4.51

Actuate 6.0 sp1

Backup software

Tivoli server 5.1.6

Omni back 3.5

Tivoli client 5.1.5

16. Please describe both the Tivoli Storage Manager and HP Omniback environments.

a) Which platform is the server code running on?

In SLC, TSM is on an RS6000 with AIX4.3.3. In Richfield TSM is on an RS6000 with AIX 5.2. Omniback is on an HP/UX version 11.

b) What are each of the two products managing?

Both manage backups on various open system servers

17. How does the State of Utah intend to use the protocols HTTP & HTTPS? For example, based upon the request for these protocols is the State of Utah intend to use the proposed NAS and/or SAN storage solution as a web server? Does the State of Utah prefer to use the proposed NAS and/or SAN storage solution as "storage" for a web server?

See reply to Question #6

18. The State of Utah is requesting that the proposed storage solution provide "up to 255 near-instantaneous, near zero performance impact" snapshot copies of volumes. Could you please define "near zero performance impact" more specifically?

Less than 5 seconds.

19. The State of Utah is requesting the proposed solutions must be certified for Oracle, SQL Server, Sybase, MySQL and SAP. Is the State of Utah's requirement to have respondents provide "proof of certifications" from the creator of these products?

Delete this specification.

20. The State of Utah is requesting that the proposed solutions must have redundant and hot-swappable components (including but not limited to power supplies, fans, cache, controllers) so that no downtime is required to repair failed components. Does this mean that the required storage solution must be able to recover from a full control system failure? For example, storage solution must have dual controllers or "head" units? Otherwise, the State of Utah may experience some control unit failures (such as CPU failure) resulting in up to 4 hour outages while the State of Utah waits for the control unit to be repaired.

Yes

21. In the State of Utah Bid for Invitation, there is a summary cost sheet for proposed System Sizes: 6 TB, 12 TB, 18 TB, 24 TB and 30 TB. Is this request for raw or useable space? If useable, at what useable/protection level?

Useable space at RAID 5

22. In the service response categories, what constitutes a "response" in the following response times: 30 min, 2 hour and/or 4 hour from the Manufacturers Service Organization.

As stated, on site with parts.

23. The State of Utah has requested that the proposed storage solution include 73 GB & 146 GB fiber drives and SATA drives. Is it a requirement of the proposed storage solution to allow the State of Utah to mix and match these drives in a single chassis?

Use of a single chassis is not required. Describe how you would support the mix of drives and associated costs.

24. On page 4, the State of Utah requires specific response times. Our questions pertaining to this are;

a) What are these IOPS and response time based on? Are these on the host or storage side?

Based on SPC-1 benchmark, host side

b) Have you tested and achieved these performance metrics within your data center?

No, we have not tested ourselves.

c) What number of IO/sec. do you require per application/server?

IOPS per server is unknown, but in aggregate we expect between 2300 and 20,700 IOPS.

25. On page 5, the State of Utah requires "near-instantaneous" copies. Our questions pertaining to this are: Have the snapshots been flushed from the cache of the application? If no, are you requiring that open files be closed prior to the snapshot for data integrity purposes?

Snapshot refers to what is on the disk at that time. Open files need not be closed.

26. Starting on page 3, the State of Utah requires that the business providing products and support services be in business for three + years. If a certified (vendor) partner submits the bid, even though the partner hasn't been in business three years, will the State of Utah disqualify (the vendor) and its partner due to the fact that the vendor has been in business for 9 years. (The vendor) will be supporting and servicing the products that are purchased via the partner?

The requirement applies to the maintenance provider that we directly contact to handle service problems.

27. Section 1 - \$1,000,000 Liability insurance. What types of liabilities are bidders required to insure for? Data loss? Availability?

This is not a performance bond for your system. This is for general liability, not specifically IT-related. For example, if in the course of installing the system one of your employees were to break a window here, or knock over a rack of routers, the insurance would cover that.

28. Section 2 - Connectivity. FCIP is traditionally a protocol implemented by the switch fabric vendors (i.e., McData, Brocade, Cisco). Is it also a requirement for the storage provider to support FCIP or to ensure compatibility with FCIP implementation provided by the switch fabric?

See reply to Question #4.

29. In the "Systems Cost" section of the bid it asks for the cost at different TB levels. Is this for the base subsystem or for everything within the proposal that has been requested. (see questions below)

Pricing should be for the base system, including fiber channel, a minimum of four interface channels, and associated racks and software. LUN masking and heterogeneous replication should be included. Pricing for additional features (support for iSCSI, SCSI, FCIP, NAS, SATA) should be separate

30. Does the solution need to have the ability to SUPPORT connection to the following protocols OR does it need to be included with the original configurations and purchase:

- a. SCSI
- b. FCIP
- c. iSCSI
- d. CIFS / NFS

See reply to Question #4.

31. Do we include ATA configurations in the costs section of the bid. If so, do you want just ATA disks, just FC disks or a combination? If so, what combination? Or are you just wanting to know if the solution is able to do ATA within the subsystem now or in the near future?

See reply to Question #29.

32. Does the solution need to be able to replicate to heterogeneous storage or will it be a homogeneous? Do we include replication costs or just state the ability of the subsystem to do such replication? If we include it, are they campus-type replication or long distance?

The solution should include the ability to replicate to heterogeneous storage, and include that cost. Replication will be both campus-type and long distance (Salt Lake to Richfield). The State will provide the network facilities and remote systems.

33. Many of the questions ask if the proposed solution can support hardware and software features, i.e. Snapshots, Internal Volume Copy, Sync and Async Replication, etc. Are each of these to be included in the cost of the proposal?

See reply to Question #29.

34. The bid lists a wide variety of Operating Systems. If all/part of these are connected to the disk subsystem at the same time LUN masking will be necessary. Do you want that included on the "Systems Costs" section?

Yes.

35. As I formulate the proposed solutions for the disk subsystem sizes listed on the RFP (6TB, 12TB, 18TB...) another question has come up. Our disk subsystem is modular and can fit in any 19" rack or we can provide the racks (cabinet). Would you like to use your racks and we provide the rails or would you like for them to come in (our) cabinets?

See reply to Question #29.

36. Do the capacities listed in this section and on the bid sheet (6TB, 12TB, 18TB, 24TB, 30TB) represent raw disk capacity (no RAID applied) or capacities after a RAID level has been applied? If the capacity is not raw capacity, what RAID level should be assumed in the response?

See reply to Question #21.

37. Does the State of Utah desire the entire solution to utilize SATA disk if performance averages can be met? If an entire SATA solution is not desired what should be the mix of SATA and fibre channel disk capacity?

A SATA or other solution is acceptable if it meets performance and all other stated requirements, including reliability.

38. Are there existing iSCSI, SCSI, FCIP, or NAS (CIFS/NFS) products in place at the State of Utah which would be required to utilize this disk solution? If so, please describe with a minimum of manufacturer, make, and model number.

There are currently none, but all are potentially in the future.

39. Must the FCIP capability be included in the response, or is it a future option that the State of Utah wants available (in which case the item will not be bid, but the response will indicate that the solution is capable of providing the capability)?

See reply to Question #4.

40. Must the iSCSI capability be included in the response, or is it a future option that the State of Utah wants available (in which case the item will not be bid, but the response will indicate that the solution is capable of providing the capability)?

See reply to Question #4.

41. Must the SCSI capability be included in the response, or is it a future option that the State of Utah wants available (in which case the item will not be bid, but the response will indicate that the solution is capable of providing the capability)?

See reply to Question #4.

42. Must the respondent include CIFS and NFS capability in their response (e.g., a NAS solution), or is it a future option that the State of Utah wants available (in which case the item will not be part of the acquisition price/bottom line price on the bid, but the response will indicate that the solution is capable of providing the capability).

We are not necessarily looking for a NAS solution. We do have servers that support CIFS and NFS and want the storage system to support those servers.

43. How many total servers/systems would be connected to this storage subsystem via NAS (CIFS & NFS protocols)? How many users will utilize the NAS systems? Would the NAS solution represent a consolidation of existing file servers? If so, how many, what type (NFS/CIFS), and how much storage capacity (identified by CIFS & NFS protocol) is currently provided?

See reply to Question #14.

44. Regarding the FTP, HTTP, and HTTPS support, is this question specifically directed at a NAS solution or is it a general requirement for the disk subsystem? If it is applied to the disk subsystem, can you give an example as to how the State of Utah would like to utilize this feature?

See reply to Question #6.

45. Regarding the snapshot copy requirement, is the requirement to have up to 255 copies of the same source volume, or is the requirement to support up to 255 different source volumes with a snapshot of each one at the same instant in time?

The former – snapshots of any volume, up to 255 copies.

46. The RFP states that “The proposed solution(s) must provide the ability to do synchronous or asynchronous volume replication within the solution and other storage devices at the State of Utah including devices at remote locations,” Exactly what “other storage devices” must this new solution support? Please reply with a minimum of manufacturer, make, and model number.

See replies to Questions #32 and #7.

47. Should the synchronous copy capability be included in the priced response, or is it a future option that the State of Utah wants available (in which case the item will not be part of the acquisition price/bottom line price on the bid, but the response will indicate that the solution is capable of providing the capability)? If this capability must be bid, how much data must be copied using this synchronous capability?

Yes, include the capability, sized up to the maximum size of the system.

48. Should the asynchronous copy capability be included in the priced response, or is it a future option that the State of Utah wants available (in which case the item will not be bid, but the response will indicate that the solution is capable of providing the capability)? If this capability must be bid, how much data must be copied using this
See reply to Question #47.

49. How many total servers running the Microsoft Windows operating system would be connected to this storage subsystem via fibre channel? What versions of Microsoft Windows must be supported (NT, 2000, 2003, etc.)?
See replies to Questions #13c and #15.

50. How many total servers running the Sun Solaris operating system would be connected to this storage subsystem via fibre channel?
See replies to Questions #13c and #15.

51. How many total servers running the Linux (SUSE & Red Hat) operating system would be connected to this storage subsystem via fibre channel?
See replies to Questions #13c and #15.

52. How many total servers running the HP/UX operating system would be connected to this storage subsystem via fibre channel?
See replies to Questions #13c and #15.

53. How many existing SAN ports are available for incorporating this solution? Please provide the manufacture, make, and model number of the existing SAN fabric. Is there a requirement for any additional SAN fabric (switches or directors)?
No additional SAN items are required. The State will provide the necessary SAN ports. See reply to Question #13.

54. Should integration services be proposed for the solution?
No.

55. Are data migration services required to move data from current storage devices to this new solution? If so, what operating systems require migration? How much storage capacity must be migrated?
No.

56. Is the snapshot capability targeted toward a NAS solution?
No.

57. Is multi-pathing software required for systems that will use the disk solution (path fail over/load balancing software)? If so, how many systems will require this software?
See reply to Question #13d.